Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Missile Defense Agency										DATE: February 2012	

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	PE 0604886C: *Advanced Remote Sensor Technology (ARST)*

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	-	-	58.742	-	58.742	35.159	18.899	18.884	18.883	Continuing	Continuing
MD95: *Advanced Remote Sensor Technology*	-	-	55.760	-	55.760	33.384	18.899	18.884	18.883	Continuing	Continuing
MD40: *Program-Wide Support*	-	-	2.982	-	2.982	1.775	-	-	-	Continuing	Continuing

Note

Advanced Remote Sensor Technology is a new Program Element in FY 2013.

A. Mission Description and Budget Item Justification

To support Ballistic Missile Defense, the Missile Defense Agency is developing future space based sensor technology to enable the defeat of enemy raids and track ballistic missiles early, expanding the Ballistic Missile Defense battle space. System modeling has shown that integrating advanced remote sensors into our Ballistic Missile Defense System (BMDS) will allow it to efficiently develop precise 3-dimensional tracks, discriminate the threat, and significantly increase interceptor performance from a single platform. The Advanced Remote Sensor Technology Program matures emerging sensor technologies and algorithms to achieve these capabilities.

The Advanced Remote Sensor Technology program follows a knowledge point based approach with clearly defined metrics and risk burn down plans to develop and test advanced sensor component technology for incorporation into future BMDS space based systems. These advanced sensor technology demonstrations incrementally prove the key functions of sensor acquisition and control, precision 3-dimensional tracking, target scene management, and discrimination through laboratory, ground, and flight tests utilizing unmanned aerial vehicles and manned aircraft as recoverable cost effective test platforms to enable the development of remote sensors for space.

Contributions to Combatant Commanders Achievable Capabilities List:
- Search and monitor airspace
- Track items of interest continuously
- Classify, identify, characterize, and discriminate
- Conduct effects assessment

Goals:
- Demonstrate the feasibility and performance of advanced sensor technology for integration into the BMDS Command, Control, Communication, Computers, Intelligence, Surveillance, and Reconnaissance architecture for space systems
- Demonstrate the contribution of advanced remote sensor technology to overall BMD system discrimination capabilities
- Demonstrate the contribution of advanced remote sensor technology to overall BMD system raid handling capabilities

Exhibit R-2, **RDT&E Budget Item Justification:** PB 2013 Missile Defense Agency	**DATE:** February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0604886C: *Advanced Remote Sensor Technology (ARST)*

MD40 consists of Program-Wide Support (PWS) non-headquarters management costs in support of MDA functions and activities across the entire BMDS.

B. Program Change Summary ($ in Millions)	**FY 2011**	**FY 2012**	**FY 2013 Base**	**FY 2013 OCO**	**FY 2013 Total**
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	-	58.742	-	58.742
Total Adjustments	-	-	58.742	-	58.742
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustment	-	-	58.742	-	58.742

Change Summary Explanation

Advanced Remote Sensor Technology is a new Program Element in FY 2013.

Exhibit R-2A, RDT&E Project Justification: PB 2013 Missile Defense Agency									DATE: February 2012	
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 4: *Advanced Component Development & Prototypes (ACD&P)*				**R-1 ITEM NOMENCLATURE** PE 0604886C: *Advanced Remote Sensor Technology (ARST)*				**PROJECT** MD95: *Advanced Remote Sensor Technology*		

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD95: *Advanced Remote Sensor Technology*	-	-	55.760	-	55.760	33.384	18.899	18.884	18.883	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note
  N/A

A. Mission Description and Budget Item Justification

  Ballistic Missile Defense System (BMDS) architecture analysis has shown that tracking large enemy ballistic missile raids with remote advanced sensors decreases the time between the enemy`s launch and our first track. This increases the available battle space by hundreds of seconds and gives the BMDS the ability to shoot, look, and then shoot again.

  The Agency is executing a technology development strategy with clearly defined knowledge points, metrics, and risk burn down plans. Our strategy progresses from analysis, models, and simulations to laboratory, ground, and flight tests to incrementally verify and validate functionality and performance of the candidate technology. FY 2013 will consist of technology development and system design.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Title: Advanced Remote Sensor Technology	-	-	55.760
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: NA			
FY 2012 Plans: NA			
FY 2013 Plans: - Complete advanced sensor data mining - Develop advanced sensor technology - Develop advanced sensor system control algorithms and software - Update models and simulation to reflect advanced sensor system functionality			

Exhibit R-2A, **RDT&E Project Justification:** PB 2013 Missile Defense Agency		**DATE:** February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0604886C: *Advanced Remote Sensor Technology (ARST)*	**PROJECT** MD95: *Advanced Remote Sensor Technology*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	**FY 2011**	**FY 2012**	**FY 2013**
- Begin surrogate advanced sensor integration			
Accomplishments/Planned Programs Subtotals	-	-	55.760

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 0603175C: *Ballistic Missile Defense Technology*	92.617	74.920	79.975		79.975	81.388	115.427	133.742	136.654	Continuing	Continuing

D. Acquisition Strategy

The acquisition strategy consists of three focus areas. First, leverage the technical expertise of Federally Funded Research and Development Centers and University Applied Research Centers. Second, continue to leverage relevant Office of the Secretary of Defense, Navy, Air Force and Agency contracts within the limits of Competition and Contracting Act taking into account contractor past performance, scope, ceiling and period of performance. Third, seek industry solutions via the Agency`s Broad Agency Announcement.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency				DATE: February 2012								

APPROPRIATION/BUDGET ACTIVITY
0400: *Research, Development, Test & Evaluation, Defense-Wide*
BA 4: *Advanced Component Development & Prototypes (ACD&P)*

R-1 ITEM NOMENCLATURE
PE 0604886C: *Advanced Remote Sensor Technology (ARST)*

PROJECT
MD95: *Advanced Remote Sensor Technology*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Advanced Remote Sensor Technology Advanced sensor technology development	C/CPFF	Various:Various	-	-		6.500	Oct 2012	-		6.500	Continuing	Continuing	Continuing
Advanced Remote Sensor Technology Advanced sensor development, software builds, and advanced sensor integration	C/CPFF	Various:Various	-	-		15.000	Oct 2012	-		15.000	Continuing	Continuing	Continuing
Advanced Remote Sensor Technology Advanced sensor technology development and design, control algorithms and software builds	FFRDC	Massachusetts Institute of Technology :Lexington, MA	-	-		15.959	Oct 2012	-		15.959	Continuing	Continuing	Continuing
Subtotal			-	-		37.459		-		37.459			

Remarks
N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	-		-		-		-	0.000	0.000	0.000

Remarks
N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0604886C: *Advanced Remote Sensor Technology (ARST)*	**PROJECT** MD95: *Advanced Remote Sensor Technology*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Advanced Remote Sensor Technology Advanced sensor system test and evaluation	C/CPFF	Massachusetts Institute of Technology:Lexington, MA	-	-		8.600	Oct 2012	-		8.600	Continuing	Continuing	Continuing
Subtotal			-	-		8.600		-		8.600			

Remarks
  N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Advanced Remote Sensor Technology Program Management	Allot	Missile Defense Agency :Other Government Agency`s	-	-		9.701	Oct 2012	-		9.701	Continuing	Continuing	Continuing
Subtotal			-	-		9.701		-		9.701			

Remarks
  N/A

	Total Prior Years Cost	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-	55.760	-	55.760			

Remarks
  NA

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Missile Defense Agency		**DATE:** February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0604886C: *Advanced Remote Sensor Technology (ARST)*	**PROJECT** MD95: *Advanced Remote Sensor Technology*

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Missile Defense Agency		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0604886C: *Advanced Remote Sensor Technology (ARST)*	**PROJECT** MD95: *Advanced Remote Sensor Technology*

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Develop advanced sensor technology	4	2013	4	2013
Deliver advanced remote sensor system software	4	2014	4	2014
Ground test integrated surrogate advanced sensor	4	2014	4	2014
Measure 3-dimensional precise tracking performance in ground test	4	2014	4	2014
Assess ability to extract discrimination features	4	2014	4	2014
Measure 3-dimensional tracking and discrimination performance in a complex scene	4	2015	4	2015
Measure advanced sensor raid performance in a simulated environment	4	2015	4	2015
Demonstrate refined advanced remote sensor capabilities for discrimination	4	2016	4	2016
Complete advanced remote sensor technology demonstrations	4	2017	4	2017

Exhibit R-2A, **RDT&E Project Justification:** PB 2013 Missile Defense Agency				**DATE:** February 2012						
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 4: *Advanced Component Development & Prototypes (ACD&P)*				**R-1 ITEM NOMENCLATURE** PE 0604886C: *Advanced Remote Sensor* *Technology (ARST)*				**PROJECT** MD40: *Program-Wide Support*		

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MD40: *Program-Wide Support*	-	-	2.982	-	2.982	1.775	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0		0	0	0	0	0		

Note
  N/A

A. Mission Description and Budget Item Justification

  Program-Wide Support (PWS) contains non-headquarters management costs in support of MDA functions and activities across the entire Ballistic Missile Defense System (BMDS). Includes Government Civilians, Advisory and Assistance Services, and Federally Funded Research and Development Centers (FFRDC) providing integrity and oversight of the BMDS as well as, supporting MDA in enabling the development and evaluation of technologies that will respond to the changing threat. In addition, includes Global Deployment personnel and support performing deployment site preparation and activation. Other costs included provide facility capabilities for MDA Executing Agent locations (with the exception of Federal Office Building 2 after FY 2011), such as physical and technical security, legal services, travel and agency training, office and equipment leases, rents and utilities, data and unified communications support, supplies and maintenance, logistics and central property management of equipment, and similar operating expenses. Also includes legal settlements, and foreign currency fluctuations on a limited number of foreign contracts. In keeping with congressional intent, PWS is allocated on a pro-rata basis and therefore, fluctuates by year based on the total MDA budget.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Title: Civilian Salaries and Support	-	-	2.982
Articles:	0	0	0
Description: See Description Below			
FY 2011 Accomplishments: NA			
FY 2012 Plans: See paragraph A, Mission Description and Budget Item Justification			
FY 2013 Plans: See paragraph A, Mission Description and Budget Item Justification			
Accomplishments/Planned Programs Subtotals	-	-	2.982

C. Other Program Funding Summary ($ in Millions)
  N/A

Exhibit R-2A, **RDT&E Project Justification:** PB 2013 Missile Defense Agency		**DATE:** February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0604886C: *Advanced Remote Sensor Technology (ARST)*	**PROJECT** MD40: *Program-Wide Support*

D. Acquisition Strategy

  NA

E. Performance Metrics

  NA